

Let  $e_Z : Z_1 \times Z_2 \rightarrow T$  be a pairing on elliptic curves  $Z \in \{X, Y\}$  with sloow dual isogenies  $\phi : Y \rightarrow X$  and  $\phi^* : X \rightarrow Y$ .

See: <https://eprint.iacr.org/2019/166>

$$e_Y(H_1(\text{seed}), \underbrace{u \phi G_2}_{\text{const}}) = s = e_X(\underbrace{\phi^* H_1(\text{seed})}_{\text{VDF}}, \underbrace{u G_2}_U)$$

Anyone sends ciphertexts  $(U, E_s(\text{vote}))$ ,  
after seed revealed but well before  $\phi^* H_1(\text{seed})$ .

Moral: ASICs for RSA are not the best use for 30 million USD.